

# Natalie Muradyan

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## EDUCATION

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**Massachusetts Institute of Technology** (GPA: 4.9/5.0) Cambridge, MA

- Bachelor of Science in Computer Science and Engineering *Class of 2023*
- Master of Engineering in Computer Science (Computer Systems Concentration) *Class of 2024*
- Relevant Coursework:* Performance Engineering of Software Systems, Operating System Engineering, Computer Networks, Secure Hardware Design, Computer Systems Engineering, Elements of Software Construction, Design and Analysis of Algorithms, Computation Structures, Engineering Interactive Technologies, Probability and Random Variables

## EXPERIENCE

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**D. E. Shaw & Co.** New York, NY

*Systems Engineering Intern* Summer 2022, Summer 2023

- Developed a framework that grants specific capabilities to users, groups, or other identities at designated paths within Vault, employing a command-line interface (CLI) tool
- Restructured Vault policies into a hierarchical, tree-based format to enable fine-grained and intentional permission management, allowing inheritance
- Analyzed the performance of the Java garbage collector and identified the causes of large memory allocations to improve throughput in a trading system.
- Developed a tool for securely sharing files via weblinks and authenticating file permissions.

**MIT EECS (Introduction to Algorithms, 6.006)** Cambridge, MA

*Teaching Assistant* February 2023 – Now

- Taught recitations and review sessions on topics including data structures, graph algorithms, dynamic programming, etc.
- Designed problem sets and recitation handouts, facilitated at office hours and exams.

**Boston Scientific Neuromodulation** Valencia, CA

*Quality Software Engineering Intern* June 2021 – August 2021

- Developed an application to interface with medical device's battery longevity.
- Designed a conversion algorithm between quantities given patient's use log and system parameters.

**CryptoNDX** Yerevan, Armenia

*Researcher* August 2018 – April 2019

- Collaborated with the research group to create a comprehensive guide to the Crypto Market.
- Synthesized important information about different cryptocurrencies to develop a crypto database.

## HONORS AND AWARDS

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**Bronze medal at the 59<sup>th</sup> International Mathematical Olympiad** Cluj-Napoca, Romania, 2018

- First woman from Armenia to ever win a medal in IMO

**Bronze medal at the 15<sup>th</sup> International Zhautykov Olympiad** Almaty, Kazakhstan, 2019

- First woman from Armenia to ever win a medal in IZhO from math

**Bronze medals at the 3<sup>rd</sup> and 4<sup>th</sup> Iranian Geometry Olympiads** Yerevan, Armenia, 2016, 2017

## LEADERSHIP AND ACTIVITIES

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**Mathematics Instructor, Summer Math Camp for Girls** June 2021 – August 2021

- Organized a math camp for girls in Armenia to motivate them to participate in Math Olympiads.
- Developed the curriculum and taught on various topics on combinatorics, number theory, algebra.

**Clubs, MIT** September 2019 – Present

- President of MIT Armenian Society, Coordinator of Academic Development at Alpha Phi sorority, Member of Society of Women Engineers, MIT Society of Women in Mathematics.

## SKILLS

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- Technical: Python, C++, C, Java, Arduino, HTML, JS, SQL, ROS, SolidWorks, LaTeX, MATLAB, Git, Linux
- Languages: Armenian (Native), Russian (Fluent), Chinese (Lower Intermediate)